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## Original Research Article

## Association between oral health knowledge attitude and practices of government primary school teachers

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## ABSTRACT

**Introduction:** Oral health is an integral part of general health and imparting oral health education at younger age can prevent common oral diseases in later age. The school-going age is the most influential period of a child's life and it is this period during which the children develop skills, beliefs and attitudes which they practice throughout their lives. Teachers play a vital role in shaping the behavior and overall comprehensive development of school children.<sup>10</sup> Therefore, engagement of teachers in health promotion programmes can hypothetically lead to improvement of health in children.

**Materials and Methods:** A Web Based Questionnaire Study was conducted among Teachers in Government Primary Schools in Indore district. A total of 1404 teachers from 615 government primary school out of which 1200 teachers were willing to participate in the study were included. Permission and informed consent was obtained prior to study. The data on oral health knowledge, attitude, practice and their oral health related quality of life of teachers will be collected through online questionnaire using pretested proforma. Questions included in the questionnaire were taken from previously published studies.

**Result:** Majority of the participants in the present study were in the age group of 40-50 years with a total of 555(46.3%). Among gender males (56.5%) are more than females (43.5%). For the qualification variable most of them are post graduate in qualification (38.9%). Greater proportion of the school teachers were teaching Hindi subject (46.8%), had 10-20 years' experience in teaching (44.5%). Among the region most of them are from rural region with 71.3% Majority of the participants reported positive attitude towards exclusion of unhealthy foods from school premises (98.1%), inclusion of oral health topics in the school curriculum (98.8%), teachers being an oral health educator (83.8%) and role model for the children (98.8%) and the importance of oral health for overall health (95.3%).

**Conclusion:** The present study was conducted with the aim to evaluate the oral health knowledge, attitude and practices of Government Primary School Teachers and to determine the association among these factors with oral health related quality of life.

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## 1. Introduction

Oral health is an integral part of general health and imparting oral health education at younger age can prevent common oral diseases in later age.<sup>1</sup> World Health Organization (1948) in the preamble to its constitution

"Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity". Oral health related quality of life, this is a multidimensional construct which includes a subjective evaluation of the individuals, Oral health, Functional well-being Emotional well-being Expectations Satisfaction with care & sense of self.<sup>2</sup>

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Dental caries is a widely prevalent disease problem globally. In 2017, According to the Global Burden of Disease states that oral diseases affect approximate of 3.5 billion people worldwide, with caries of permanent teeth being the most common condition. Globally, near about 2.3 billion people suffer from caries of permanent teeth and estimated that 530 million children suffer from caries of primary teeth.<sup>3</sup> India is home to 47.3 crore children (0-18 years) comprising 34 percent of the country's total population. Annually, more than 50 million hours are lost worldwide from schools due to oral diseases. In India, the prevalence of dental caries is reported to be 50-60%. The National Health Survey conducted in 2004 in India showed data of comprehensive 51.9% of 5-year-old children, 53.8% of 12-year children and 63.1% of 15-year-old teenagers are affected by dental caries<sup>4</sup> The lack of accessibility and affordability of dental health services in developing nation like India not only result in exasperating of the diseases but also raise the cost of treatment and care.<sup>5,6</sup>

The pain and tooth loss associated with oral diseases negatively affect the nutritional intake, quality-of-life, appearance, growth, and all development of children. The treatment cost of dental caries alone can affect a country's health care expenditure for children and developing countries like India which cannot afford the treatment of established oral diseases.<sup>7</sup> The cost of carelessness of these diseases is also enhance due to the financial, personal, and social influence.<sup>8</sup> Therefore it is important to educate the children early in life, about their health and the right behavior, so that they lead a healthy life and realize their full potential.

These healthy, educated, and productive youngster will make the base of prosperous, resilient, and sustainable communities. One of the key strategies to reach children and adolescents is through schools as schools serve as an ideal platform to impart education on health issues, instituting in them healthy behaviors, forge linkages with services and reach parents and community through the students.<sup>9</sup> The school-going age is the most influential period of a child's life and it is this period during which the children develop skills, beliefs and attitudes which they practice throughout their lives.<sup>10,11</sup>

Parents and teachers have an enormous influence on biological, psychological, emotional and intellectual development of children. A teacher is the most resourceful manpower available to deliver any health care at school setup. Teachers play a lead role in shaping or making the behavior and overall comprehensive evolution of school children.<sup>12</sup> Therefore, engagement of teachers in health promotion programs can hypothetically lead to improvement of health in children.<sup>13,14</sup>

School-based programs of oral health educational considered to be the most efficient, reliable and cost-effective method of oral health education for children.<sup>15-17</sup>

They can carry out sustainable regular oral health promotion interventions, including oral health education as part of the academic curriculum. Although schools and teachers represent an ideal environment for knowledge development, the promulgation of oral health knowledge has some limitations.<sup>18,19</sup> For teachers to be good oral health educators, they should have correct oral health knowledge, be motivated, have a positive attitude towards oral health and be good examples by performing optimal oral health practices.

Therefore, the present study has been undertaken done with the aim of to assess Oral health knowledge, attitude, practice and Oral Health Related Quality of life school teachers and to evaluate a possible relationship between teachers' knowledge, attitude, practice and their oral health related quality of life.

### 1.1. Aim

To determine the oral health knowledge, attitude and practices of government teachers of primary school and to assess the association among these factors with oral health related quality of life.

### 1.2. Objectives

1. To evaluate the oral health related knowledge of primary school teachers through pre-validated questionnaire.
2. To assess the oral health related attitude of primary school teachers through pre-validated questionnaire.
3. To determine the oral health related practices of primary school teachers through pre-validated questionnaire.
4. To determine the oral health related quality of life (OHRQOL) questionnaire among the study population.
5. To determine the possible relationship between teachers' knowledge, attitude practices and their oral health related quality of life.

## 2. Materials and Methods

A Web Based Questionnaire Study was conducted among teachers in government primary schools in Indore district .The study was conducted with the aim to evaluate the oral health knowledge, attitude and practices of government primary school teachers and to assess the association among these factors with oral health related quality of life. The study was conducted for a period of 2 months from September 2020 to October 2020.

### 2.1. Study area

Indore is the largest and populous city of Madhya Pradesh in the Indian state. This is considered to be an education hub of the state. In the southern edge of Malwa Plateau,

Indore is located and a census-estimated 2011 population of 1,994,397. Indore city is over a land area of just 530 square kilometers (200 sq. mi), making Indore the densely populated city in the Madhya Pradesh. (Courtesy: Indore.nic.in/)

## 2.2. Study design

A web based questionnaire study was carried out to assess the oral health knowledge, attitude and practices of government primary school teachers and to determine the association among these factors with oral health related quality of life, Indore district.

## 2.3. Study population

A list of all the government primary schools of Indore district was obtained from the district education office, (DEO) Indore. In the list obtained, total 1404 teachers from 615 government primary school out of which 1200 teachers were willing to participate in the study.

## 2.4. Inclusion criteria

1. Government Primary School Teachers who are willing to participate and provide valid Email ID.
2. Only Primary Government School Teachers of Indore District ranging from 21-50 years.

## 2.5. Exclusion criteria

Government Primary School Teachers with inability to cooperate with the study protocol and who did not provide consent.

Considering a response rate of 90% the estimated minimum sample size in the present study was found to be 1185, which was rounded off to 1200. Final sample size will comprise of 1200, Government primary school teachers.

## 2.6. Sampling procedure

Sample size was calculated to be 1067 teachers, based on the number of primary school teachers (1404) in Indore, using a type-I error of 0.05, 3% margin of error and estimated proportion of 0.5. Considering a 88% response rate, a total of 1200 teachers were targeted.

## 2.7. Pilot study

A pilot study was carried out to check the feasibility and practicability of procedure of data collection before commencement of the main study. Pilot study was conducted among 20 teachers from selected study area. These study subjects were not included in the final sample.

## 2.8. Oral health related quality of life (OHRQOL) questionnaire<sup>29</sup>

The Oral Health Impact Profile (OHIP-14) is an impressive range of instrument that assess the impact of oral condition on wellbeing and quality of life. OHIP-14 measures people's perception of the social impact of oral disorder on their wellbeing. The questions in the OHIP capture seven conceptually formulated dimensions that are based on Locker's theoretical model of oral health.

## 3. Results

The present study was carried out to evaluate the oral health knowledge, attitude and practices of Government Primary School Teachers and to determine the association among these factors with oral health related quality of life. The results are based on analysis of 1200 school teachers evaluating and determining the association between knowledge, attitude and practices and oral health related quality of life.

**Table 1:** Descriptive characteristics of study participants

| Variable         | Categories            | Frequency N (%) |
|------------------|-----------------------|-----------------|
| Age              | 40-50 years           | 555 (46.3)      |
|                  | <30 years             | 103 (8.6)       |
|                  | 30-40 years           | 270 (22.5)      |
|                  | >50 years             | 272 (22.7)      |
| Gender           | Male                  | 678 (56.5)      |
|                  | Female                | 522 (43.5)      |
|                  | Graduate              | 282 (23.5)      |
| Qualification    | Post graduate         | 467(38.9)       |
|                  | Diploma in education  | 274(22.8)       |
|                  | Bachelor in education | 177(14.8)       |
|                  | Maths                 | 203 (16.9)      |
| Teaching Subject | Science               | 187 (15.6)      |
|                  | English               | 142 (11.8)      |
|                  | Hindi                 | 561 (46.8)      |
|                  | Environment           | 107 (8.9)       |
| Experience       | <10years              | 212 (17.7)      |
|                  | 10-20 years           | 534 (44.5)      |
|                  | 30-40 years           | 110 (9.2)       |
| Region           | 20-30 years           | 344 (28.7)      |
|                  | Urban                 | 345 (28.7)      |
|                  | Rural                 | 855 (71.3)      |

Table 1 Shows the descriptive characteristics of the participants in the present study. Majority of the participants in the present study were in the age group of 40-50 years with a total of 555(46.3%). Among gender males (56.5%) are more than females (43.5%). For the qualification variable most of them are post graduate in qualification (38.9%). Greater proportion of the school teachers were teaching Hindi subject (46.8%), had 10-20 years' experience in teaching (44.5%). Among the region most of them are from rural region with 71.3%

**Table 2:** Assessment of oral health related knowledge of primary school teachers

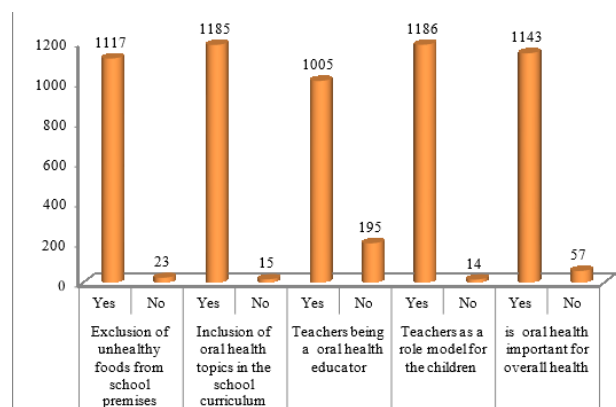
| Question  | Response                        | N (%)       |
|---|---------------------------------|-------------|
| Do you have knowledge on the number of teeth present?           | 20                              | 6 (.5)      |
|   | 25                              | 23 (1.9)    |
|   | 34                              | 8 (.7)      |
|   | 32                              | 1163 (96.9) |
| Is sugar consumption related to dental caries?                  | Yes                             | 952 (79.3)  |
|   | No                              | 175 (14.6)  |
|   | Do not know                     | 27 (2.3)    |
|   | Maybe                           | 46 (3.8)    |
| Is it necessary to rinse mouth?                                 | Once a daily                    | 21 (1.8)    |
|   | Twice a daily                   | 307 (25.6)  |
|   | Not required                    | 25 (2.1)    |
|   | After every meal                | 847 (70.6)  |
| What is the ideal time to visit dentist?                        | Once in 6 months                | 611 (50.9)  |
|   | Once a year                     | 291 (24.3)  |
|   | When caries is evident          | 106 (8.8)   |
|   | When there is pain and swelling | 192 (16)    |
| Is there any relation between general health and dental health? | Yes                             | 866 (72.2)  |
|   | No                              | 208 (17.3)  |
|   | Maybe                           | 29 (2.4)    |
|   | Do not know                     | 97 (8.1)    |

Table 2 Shows the assessment of oral health related knowledge scores of primary school teachers. Major proportion of the participants in the present study reported appropriate response regarding knowledge where 96.9% of participant responded correctly regarding number of teeth present. For the relationship of sugars with dental caries 79.3% of the participant responded correctly, while 70.6% of the participant responded correct response about necessity of rinsing mouth. 50.9% and 72.2% of the participant was found correct knowledge regarding ideal time to visit dentist and the relationship between general and dental health respectively.

Table 3 Shows the assessment of oral health related practices of primary school teachers. Majority of the participants in the present study reported frequency of sugar consumption as once a week (43.9%), brushing frequency as twice daily (71.3%), frequency of changing toothbrush as after 3 months (53.3%), toothbrush and toothpaste as the means of cleaning (92.6%), use of fluoride toothpaste (50.9%), tongue cleaning after every brushing (58.8%), visiting dentist in case of pain (80.9%) and discussing dental hygiene practices with students every week (67.5%).

Table 4 Shows the assessment of oral health related attitude of school teachers. Majority of the participants reported positive attitude towards exclusion of unhealthy foods from school premises (98.1%), inclusion of oral health topics in the school curriculum (98.8%), teachers being an oral health educator (83.8%) and role model for the children (98.8%) and the importance of oral health for overall health (95.3%).

Table 5 Shows the assessment of oral health related quality of life questionnaire among the study participants.

**Graph 1:** Oral health related attitude of school teachers

An assessment of the OHRQL questionnaire in the present study revealed occasionally unsatisfactory diet (36.8%) and never any interrupted meals (48.3%), difficulty in relaxing (45.3%), embarrassment (60.8%), irritation 68.6% or difficulty in doing usual job (58.1%) due to teeth problems in major proportion of study participants

Table 6 Shows the evaluation of mean knowledge, attitude, practices and oral health related quality of life among the study participants. The mean knowledge, practices, attitude and OHRQL scores in the present study were reported to be 3.78 +1.02, 5.20+1.34, 4.74+.53 and 24.31+5.55 respectively.

Table 7 Shows the correlation between knowledge, attitude, practices and oral health related quality of life of the study participants. An assessment of the relationship among the study participants revealed positive

**Table 3:** Assessment of oral health related practices of primary school teachers

| Question   | Response                   | N (%)       |
|--|----------------------------|-------------|
| How much your frequency of sugar consumption               | Never                      | 55 (4.6)    |
|  | Once a week                | 527 (43.9)  |
|  | Everyday                   | 425 (35.4)  |
| How many times you are brushing in a day                   | After every meal           | 193 (16.1)  |
|  | Once daily                 | 256 (21.3)  |
|  | Twice daily                | 855 (71.3)  |
|  | After every meal           | 15 (1.3)    |
| Which type of method you used to clean the teeth?          | Depending on situation     | 74 (6.2)    |
|  | Toothpaste and toothbrush  | 1111 (92.6) |
|  | Toothpowder and toothbrush | 36 (3.0)    |
|  | Neemstick                  | 49 (4.1)    |
| In how many days you are changing the toothbrush           | Finger and water           | 4 (.3)      |
|  | once a year                | 195 (16.3)  |
|  | once in 6 month            | 23 (1.9)    |
|  | once in 3 month            | 640 (53.3)  |
| Whether you are using the fluoridated toothpaste           | Only when it's get damage  | 342 (28.5)  |
|  | Yes                        | 611 (50.9)  |
|  | No                         | 296 (24.7)  |
|  | Maybe                      | 171 (14.2)  |
| How many times you are cleaning your tongue?               | Not aware                  | 122 (10.2)  |
|  | Never                      | 391 (32.6)  |
|  | Once a week                | 104 (8.7)   |
|  | Once a day                 | -           |
| Is there any measures taken when there is tooth pain?      | After every brushing       | 705 (58.8)  |
|  | Visit a dentist            | 971 (80.9)  |
| Are you discussing dental hygiene practices with students? | Manage their own           | 229 (19.1)  |
|  | Do not discuss at all      | 62 (5.2)    |
|  | Once in 3 month            | -           |
|  | Once a month               | 328 (27.3)  |
|  | Every week                 | 810 (67.5)  |

**Table 4:** Assessment of oral health related attitude of school teachers

| Question   | Response | N (%)       |
|--|----------|-------------|
| Exclusion of unhealthy foods from school premises        | Yes      | 1117 (98.1) |
|  | No       | 23 (1.9)    |
| Inclusion of oral health topics in the school curriculum | Yes      | 1185 (98.8) |
|  | No       | 15 (1.3)    |
| Teachers being a oral health educator                    | Yes      | 1005 (83.8) |
|  | No       | 195 (16.3)  |
| Teachers as a role model for the children                | Yes      | 1186 (98.8) |
|  | No       | 14 (1.2)    |
| Is oral health important for overall health              | Yes      | 1143 (95.3) |
|  | No       | 57 (4.8)    |

**Table 5:** Assessment of oral health related quality of life (OHRQoL) among school teachers

| Question  | Response     | N (%)      |
|---|--------------|------------|
| Has your diet unsatisfactory because of problems with your teeth, mouth or dentures?                    | Very often   | 102 (8.5)  |
|   | Fairly often | 72 (6.0)   |
|   | Occasionally | 441 (36.8) |
|   | Hardly ever  | 179 (14.9) |
|   | Never        | 406 (33.8) |
| Have you had to interrupt meals because of problems with your teeth, mouth or dentures?                 | Very often   | 58 (4.8)   |
|   | Fairly often | 44 (3.7)   |
|   | Occasionally | 339 (28.2) |
|   | Hardly ever  | 180 (15.0) |
|   | Never        | 579 (48.3) |
| Have you felt difficult to relax because of problems with your teeth, mouth or dentures?                | Very often   | 74 (6.2)   |
|   | Fairly often | 50 (4.2)   |
|   | Occasionally | 310 (25.8) |
|   | Hardly ever  | 223 (18.6) |
|   | Never        | 543 (45.3) |
| Have you been a bit embarrassed because of problems with your teeth, mouth or dentures?                 | Very often   | 49 (4.1)   |
|   | Fairly often | 25 (2.1)   |
|   | Occasionally | 215 (17.9) |
|   | Hardly ever  | 181 (15.1) |
|   | Never        | 730 (60.8) |
| Have you been a bit irritable with other people because of problems with your teeth, mouth or dentures? | Very often   | 57 (4.8)   |
|   | Fairly often | 17 (1.4)   |
|   | Occasionally | 167 (13.9) |
|   | Hardly ever  | 136 (11.3) |
|   | Never        | 823 (68.6) |
| Have you had difficulty doing your usual jobs, because of problems with your teeth, mouth or dentures?  | Very often   | 60 (5.0)   |
|   | Fairly often | 24 (2.0)   |
|   | Occasionally | 254 (21.2) |
|   | Hardly ever  | 165 (13.8) |
|   | Never        | 697 (58.1) |

**Table 6:** Mean knowledge, attitude, practices, oral health related quality of life scores among the study teachers

| Variable                            | Mean ± S.D. |
|-------------------------------------|-------------|
| Knowledge                           | 3.78 +1.02  |
| Practices                           | 5.20+1.34   |
| Attitude                            | 4.74+.53    |
| Oral Health Related Quality of Life | 24.31+5.55  |

**Table 7:** Correlation between knowledge, attitude, practices and oral health related quality of life

|           |                     | Knowledge | Practice  | Attitude  | OHRQL |
|-----------|---------------------|-----------|-----------|-----------|-------|
| Knowledge | Pearson Correlation | 1-        | .105**    | .066*     | .051  |
|           | Sig (2-tailed)      |           | .001* (s) | .048* (s) | .08   |
| Practices | Pearson Correlation | .105**    | 1-        | .178**    | .073  |
|           | Sig (2-tailed)      | .001* (s) |           | .001* (s) | .012* |
| Attitude  | Pearson Correlation | .066*     | .178**    | 1         | .163  |
|           | Sig (2-tailed)      | .048*(s)  | .001*(s)  |           | .001* |
| OHRQL     | Pearson Correlation | .051      | .073      | .163      | 1 -   |
|           | Sig (2-tailed)      | .08       | .012*     | .001*     |       |

\*\* Correlation is significant at the .001 level (2- tailed)

• Correlation is significant at the .05 level (2- tailed)

**Table 8:** Relationship between age group with knowledge, attitude, practices and oral health related quality of life of school teachers

| Variable  | Categories  | N   | Mean + S.D. | p value  |
|-----------|-------------|-----|-------------|----------|
| OHRQL     | 40-50 years | 555 | 24.71+5.04  | .001*(s) |
|           | <30 years   | 103 | 21.34+6.70  |          |
|           | 30-40 years | 270 | 24.34+5.93  |          |
|           | >50 years   | 272 | 24.58+5.37  |          |
| Knowledge | 40-50 years | 555 | 3.70+1.05   | .008*(s) |
|           | <30 years   | 103 | 4.06+1.04   |          |
|           | 30-40 years | 270 | 3.79+.98    |          |
|           | >50 years   | 272 | 3.83+.98    |          |
| Practice  | 40-50 years | 555 | 5.28+1.29   | .008*(s) |
|           | <30 years   | 103 | 5.13+1.36   |          |
|           | 30-40 years | 270 | 4.96+1.35   |          |
|           | >50 years   | 272 | 5.29+1.43   |          |
| Attitude  | 40-50 years | 555 | 4.77+.49    | .001*(s) |
|           | <30 years   | 103 | 4.48+.80    |          |
|           | 30-40 years | 270 | 4.74+.53    |          |
|           | >50 years   | 272 | 4.79+.46    |          |

**Table 9:** Relationship between gender with knowledge, attitude, practices and oral health related quality of life of school teachers

| Variable  | Categories | N   | Mean + S.D. | p value  |
|-----------|------------|-----|-------------|----------|
| OHRQL     | Male       | 678 | 24.45+5.63  | .314     |
|           | Female     | 522 | 24.12+5.44  |          |
| Knowledge | Male       | 678 | 3.17+1.06   | .006*(s) |
|           | Female     | 522 | 3.87+.96    |          |
| Practice  | Male       | 678 | 5.11+1.32   | .008*(s) |
|           | Female     | 522 | 5.31+1.36   |          |
| Attitude  | Male       | 678 | 4.74+.54    | .893     |
|           | Female     | 522 | 4.74+.52    |          |

**Table 10:** Relationship between region with Knowledge, attitude, practices and oral health related quality of life of school teachers

| Variable  | Categories | N   | Mean + S.D. | p value  |
|-----------|------------|-----|-------------|----------|
| OHRQL     | Urban      | 345 | 23.10+6.18  | .001*(s) |
|           | Rural      | 855 | 24.79+5.20  |          |
| Knowledge | Urban      | 345 | 3.90+.99    | .014*(s) |
|           | Rural      | 855 | 3.74+1.03   |          |
| Practice  | Urban      | 345 | 5.24+1.46   | .438     |
|           | Rural      | 855 | 5.18+1.29   |          |
| Attitude  | Urban      | 345 | 4.65+.63    | .001*(s) |
|           | Rural      | 855 | 4.74+.52    |          |

and statistically significant correlation between knowledge with attitude (.066) and practices (.105) of the study participants. A non significant (.08) positive correlation (.051) was however seen between knowledge and OHRQL. The relationship between practices with knowledge, attitude and OHRQL also revealed positive statistically significant between all the groups; the same findings were reported when correlation between attitude and other parameters was carried out. OHRQL was found to be positively and significantly associated with attitude and practices of study participants.

Table 8 Shows comparative evaluation of the relationship between age group with knowledge, attitude, practices and oral health related quality of life of school teachers

revealed significant differences in mean scores between school teachers with varying age groups with respect to oral health related quality of life, knowledge, practice and attitude ( p value.001, .008, .008 and .001). Mean OHRQL scores were reported to be higher in teachers belonging to age group 40-50 years; however, the knowledge scores were reported to be higher in teachers belonging to age group of <30 years and practice and attitude scores in teachers of >50 years age group respectively.

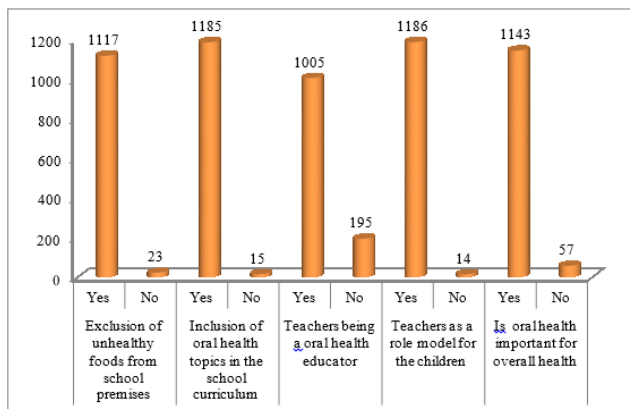
Table 9 Shows the relationship between gender with knowledge, attitude, practices and oral health related quality of life of school teachers. A comparative evaluation of the relationship between gender with knowledge, attitude, practices and oral health related quality of life of school

**Table 11:** Relationship between teaching experience with Knowledge, attitude, practices and oral health related quality of life of school teachers

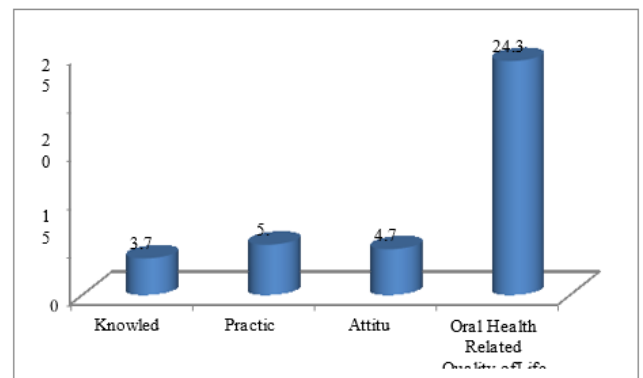
| Variable  | Categories  | N   | Mean + S.D. | p value  |
|-----------|-------------|-----|-------------|----------|
| OHRQL     | <10years    | 212 | 22.82+6.37  | .001*(s) |
|           | 10-20 years | 534 | 24.55+5.30  |          |
|           | 30-40 years | 110 | 24.47+6.25  |          |
|           | 20-30 years | 344 | 24.81+5.00  |          |
| Knowledge | <10years    | 212 | 3.91+1.04   | .214     |
|           | 10-20 years | 534 | 3.74+1.03   |          |
|           | 30-40 years | 110 | 3.77+.86    |          |
|           | 20-30 years | 344 | 3.77+1.03   |          |
| Practice  | <10years    | 212 | 4.98+1.36   | .025*(s) |
|           | 10-20 years | 534 | 5.19+1.30   |          |
|           | 30-40 years | 110 | 5.19+1.52   |          |
|           | 20-30 years | 344 | 5.34+1.33   |          |
| Attitude  | <10years    | 212 | 4.56+.74    | .001*(s) |
|           | 10-20 years | 534 | 4.79+.46    |          |
|           | 30-40 years | 110 | 4.80+.42    |          |
|           | 20-30 years | 344 | 4.76+.49    |          |

**Table 12:** Relationship between qualification with Knowledge, attitude, practices and oral health related quality of life of school teachers

| Variable  | Categories            | N   | Mean + S.D. | p value  |
|-----------|-----------------------|-----|-------------|----------|
| OHRQL     | Graduate              | 282 | 23.85+5.81  | .465     |
|           | Post graduate         | 467 | 24.48+5.45  |          |
|           | Diploma in education  | 274 | 24.45+5.55  |          |
|           | Bachelor in education | 177 | 24.36+5.40  |          |
| Knowledge | Graduate              | 282 | 3.69+1.08   | .001*(s) |
|           | Post graduate         | 467 | 3.86+1.03   |          |
|           | Diploma in education  | 274 | 3.59+1.01   |          |
|           | Bachelor in education | 177 | 4.00+.84    |          |
| Practice  | Graduate              | 282 | 5.16+1.28   | .006*(s) |
|           | Post graduate         | 467 | 5.06+1.39   |          |
|           | Diploma in education  | 274 | 5.41+1.30   |          |
| Attitude  | Bachelor in education | 177 | 5.29+1.34   | .101     |
|           | Graduate              | 282 | 4.68+.56    |          |
|           | Post graduate         | 467 | 4.75+.56    |          |
|           | Diploma in education  | 274 | 4.79+.44    |          |
|           | Bachelor in education | 177 | 4.75+.50    |          |



Graph 2: Oral health related attitude of school teachers



Graph 3: Mean knowledge, attitude, practices, oral health related quality of life scores



**Table 13:** Relationship between teaching subject with Knowledge, attitude, practices and oral health related quality of life of school teachers

| Variable  | Categories  | N   | Mean + S.D. | p value  |
|-----------|-------------|-----|-------------|----------|
| OHRQL     | Maths       | 203 | 25.12+4.81  | .042*(s) |
|           | Science     | 187 | 23.59+6.01  |          |
|           | English     | 142 | 23.65+6.25  |          |
|           | Hindi       | 561 | 24.35+5.44  |          |
|           | Environment | 107 | 24.66+5.47  |          |
| Knowledge | Maths       | 203 | 3.74+1.09   | .001*(s) |
|           | Science     | 187 | 4.02+.96    |          |
|           | English     | 142 | 4.12+.92    |          |
|           | Hindi       | 561 | 3.62+1.01   |          |
|           | Environment | 107 | 3.85+.98    |          |
| Practice  | Maths       | 203 | 4.93+1.27   | .007*(s) |
|           | Science     | 187 | 5.13+1.37   |          |
|           | English     | 142 | 5.13+1.50   |          |
|           | Hindi       | 561 | 5.32+1.31   |          |
|           | Environment | 107 | 5.28+1.33   |          |
| Attitude  | Maths       | 203 | 4.75+.54    | .005*(s) |
|           | Science     | 187 | 4.68+.60    |          |
|           | English     | 142 | 4.66+.63    |          |
|           | Hindi       | 561 | 4.80+.46    |          |
|           | Environment | 107 | 4.64+.55    |          |

teachers revealed significant differences between males and females with respect to knowledge and practices (p value .006 and .008). Females reported significantly greater mean knowledge and practice scores when compared to males.

Table 10 Shows the relationship between region with Knowledge, attitude, practices and oral health related quality of life of school teachers. A comparative evaluation of the relationship between region with knowledge, attitude, practices and oral health related quality of life of school teachers revealed significant differences between school teachers of urban and rural region with respect to oral health related quality of life, knowledge and attitude (p value .001, .014 and .001). Mean knowledge scores were reported to be higher in teachers belonging to urban region whereas mean oral health related quality of life and attitude scores were reported to be significantly higher in teachers belonging to rural areas.

Relationship between teaching experience with knowledge, attitude, practices and oral health related quality of life of school teachers was shown in Table 11. A comparative evaluation of the relationship between experiences with knowledge, attitude, practices and oral health related quality of life of school teachers revealed significant differences in mean scores between school teachers with different degree of experiences with respect to oral health related quality of life, practice and attitude (p value .001, .025 and .001). Mean OHRQL and practice were reported to be higher in teachers with 20-30 years experience of teaching whereas the mean attitude scores were reported to be higher in teachers with 30-40 years of teaching experience.

Table 12 Shows relationship between qualification with knowledge, attitude, practices and oral health related quality of life of school teachers. A comparative evaluation of the relationship between qualification with knowledge, attitude, practices and oral health related quality of life of school teachers revealed significant differences in mean scores between school teachers with different degree of qualifications with respect to knowledge and practices (p value .001 and .006). School teachers with bachelor in education reported greater mean knowledge and teachers with diploma in education reported greater mean practice scores in the present study.

Table 13 Shows Relationship between teaching subject with Knowledge, attitude, practices and oral health related quality of life of school teachers. A comparative evaluation of the relationship between teaching subject with knowledge, attitude, practices and oral health related quality of life of school teachers revealed significant differences in mean scores between school teachers with different teaching subjects with respect to oral health related quality of life, knowledge, practice and attitude scores (p value .042, .001, .007 and .005). Mean OHRQL scores were reported in school teachers teaching maths, knowledge in English teachers and mean attitude and practices scores in teachers.

#### 4. Conclusion

Based on the result of the present study, most of the teachers show satisfactory knowledge in preventive oral health, they still lag behind in knowledge in some crucial parts of oral health. Oral health quality of life of school teacher is good

but need to be improved. All the teachers should be trained at regular intervals, comprehensively regarding importance of oral health and creating awareness on oral health promotion for their students with the help of health care personnel or organizations. Presently, the school curriculum has topics on oral health and its importance. Teachers can be considered to educate and motivate schoolchildren in maintaining their oral health. Efforts should be made to involve all teachers to educate and teach the child. There is a definite and immediate need for teacher training programs on basic oral health knowledge. Further workshops are recommended to improve their existing knowledge.

## 5. Summary

The present study was conducted with the aim to evaluate the oral health knowledge, attitude and practices of Government Primary School Teachers and to determine the association among these factors with oral health related quality of life. A Web Based Questionnaire Study was conducted among Teachers in Government Primary Schools in Indore district. A total of 1404 teachers from 615 government primary school out of which 1200 teachers were willing to participate in the study were included. Permission and informed consent was obtained prior to study. The data on oral health knowledge, attitude, practice and their oral health related quality of life of teachers will be collected through online questionnaire using pretested proforma. Questions included in the questionnaire were taken from previously published studies.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

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